

ABSTRACT OF THE DISCLOSURE

A cooling plate includes a groove, which becomes a passage of a coolant, inside a body, and one or more fins are provided inside the groove. The groove is covered with a lid having width larger than the groove, and the lid is joined to the body by friction stir welding. A weld bead formed by the joining is outside the passage, and the weld bead formed by the joining is formed within the body. In a manufacturing method of a cooling plate that has a first groove, which becomes a passage of a coolant, and a second groove, which has width larger than the first groove and receives a lid on the first groove, inside a body, receives the lid on the second groove, and is joined to the body, while the lid and the body are joined together by the friction stir welding owing to insertion of a rotation tool having a shoulder and a pin, the joining is performed so that a weld bead formed by the joining may become out of the passage. A target for sputtering is joined to the cooling plate.

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